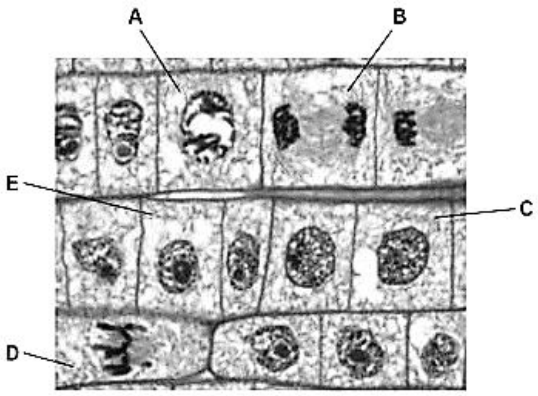
GCSE Cell Division, Structures & Transport | Questions

1. **The diagram on the right indicates cells at various stages of the cell cycle.**



i. Which cell is <u>not</u> undergoing mitosis? (1)

A ☐ B ☐ C ☐ D ☐

ii. Cell E possesses eight chromosomes. When it divides by mitosis, how many chromosomes does each new cell contain? (1)

2 ☐ 4 ☐ 8 ☐ 16 ☐

2. **Complete the sentences below using the words in the box.**

carbon dioxide	**chlorophyll**	**energy**
light	**mineral ions**	**water**

i. Through osmosis, plant cells absorb ..... (1)

ii. With the use of active transport, plant cells absorb ..... (1)

iii. Active transport needs ..... to move substances against the concentration gradient. (1)

3. **Give answers using Figures 1 and 2 below.**

i. Give two pieces of lab equipment from **Figure 1** that the student used to prepare cells for viewing under a microscope. (2)

a) ..... b) .....

ii. What is the name of Part A in **Figure 2?** (1) .....

iii. What is the function of Part B in **Figure 2?** (1) .....

iv. If a student fails to see the cells with a microscope, suggest **one** reason why. (1)

.....

v. Describe <u>two differences</u> between the structure of a red blood cell to that of a plant cell. (2)

.....

.....

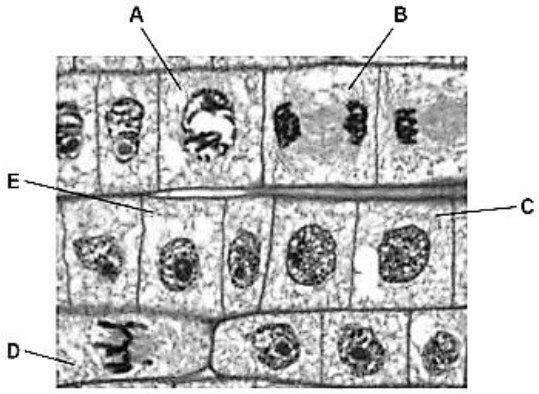
Figure 1

Figure 2

GCSE Cell Division, Structures & Transport | Answers

[Total marks: 12]

1. **The diagram on the right indicates cells at various stages of the cell cycle.**



iii. Which cell is <u>not</u> undergoing mitosis? (1)

A ☐ B ☐ C **X** D ☐

iv. Cell E possesses eight chromosomes. It then divides by mitosis. How many chromosomes does each new cell contain? (1)

2 ☐ 4 ☐ 8 **X** 16 ☐

2. **Complete the sentences below using the words in the box.**

carbon dioxide	**chlorophyll**	**energy**
light	**mineral ions**	**water**

i. Through osmosis, plant cells absorb ***water*** (1)

ii. With the use of active transport, plant cells absorb ***mineral ions*** (1)

iii. Active transport needs ***energy*** to move substances against the concentration gradient. (1)

3. **Give answers using Figures 1 and 2 below.**

i. Give two pieces of lab equipment from **Figure 1** that the student used to prepare cells for viewing under a microscope. (2)

Any two from:

• (microscope) slide

• cover slip

• dye / stain, allow named dye / stain; ignore water

• (mounted) needle

• pipette / dropper

• scalpel (ignore knife)

• forceps / tweezers (allow swab to collect cells)

ii. What is the name of Part A in **Figure 2?** (1)

eyepiece / lens (do not accept objective lens)

iii. What is the function of Part B in **Figure 2?** (1)

to focus the image / cells

(allow "to make the cells / image clear(er)")

(allow "to improve resolution (of the image)")

(ignore "to move the stage up / down")

(do not accept reference to magnification)

iv. If a student fails to see the cells with a microscope, suggest **one** reason why. (1)

Any one from:

• no cells in the field of view

• slide not in the correct position

• mirror not in correct position

(allow light / microscope not switched on / plugged in)

v. Describe <u>two differences</u> between the structure of a red blood cell to that of a plant cell. (2)

Any two from:

- **red blood cell has no nucleus / plant cell has a nucleus**
- **red blood cell has no cell wall / plant cell has a cell wall**
- **red blood cell is a biconcave disc / there are many different shapes of plant cell**
- **red blood cell contains hemoglobin / plant cells do not contain hemoglobin**
- **red blood cells do not contain chlorophyll / plant cells (may) contain chlorophyll**
- **red blood cell has no chloroplasts / plant cell has chloroplasts**
- **red blood cell has no (permanent) vacuole / plant cell has a (permanent) vacuole**
- **red blood cells are (much) smaller than plant cells**

Figure 1

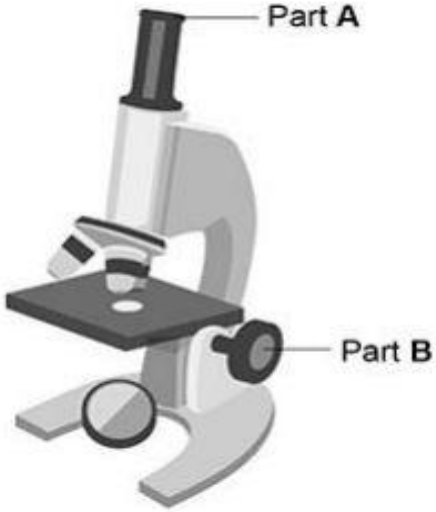



Figure 2